

December 13, 2013

Mark McCune  
Director, Structure Design  
Union Pacific Railroad  
1400 Douglas Street, Stop 0910  
Omaha, Nebraska  
68179-0910

**Re: DRAFT Approval of 401 Water Quality Certification with Conditions.**

DRAFT Water Quality 401 Certification No.: SPK 2011-00755.

USACE 404 Permit No.: SPK 2011-0755, dated December 6, 2013.

Applicant: Union Pacific Railroad.

Project: Temporary Closure of the East Culvert of Great Salt Lake Causeway.

Purpose: To avoid further safety risks to causeway railroad traffic.

Location: The east culvert is located at Mile Post 750.53, in Section 29, Township 6 North, Range 6 West, Salt Lake Meridian, 41.221 and -112.561, Box Elder County, Utah.

Watercourse: Great Salt Lake, Box Elder County, Utah.

Dear Mr. McCune:

Pursuant to Section 401 of the Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), the Division of Water Quality (DWQ) certifies it has reasonable assurances that any discharge associated with the temporary closure of the East Culvert of Great Salt Lake Causeway will not violate surface water quality standards, or cause additional degradation in surface waters not presently meeting water quality standards. In accordance with Section 401(a)(1) of the CWA [33 U.S.C. Sec. 1341(a)(1)], DWQ hereby issues this 401 Water Quality Certification provided the conditions outlined below are met and included in the USACE 404 NWP 14 permit SPK-2011-00755 dated December 6, 2013, and issued to Union Pacific Railroad (UPRR).

The Public Comment period for this action begins Thursday, December 12, 2013 through Wednesday, January 15, 2014. However, after careful evaluation of information provided by Union Pacific Railroad (UPRR) documenting the imminent threat of failure of the East Culvert, DWQ intends to issue 401 Water Quality Certification to this project after 6:00 p.m. on Monday, December 16, 2013. The Director of the Division of Water Quality (Director) has decided to issue the 401 Certification before the end of the public comment period due to the instability of the east culvert and the need for UPRR to commence its repair work. However, public comments will continue to be accepted until **Wednesday, January 15, 2014 at 6:00 p.m.** The Director will review the comments received, prepare a response, and modify the 401 Water Quality Certification, if appropriate. This certification anticipates that UPRR will pursue an Individual Permit with USACE and the 401 Water Quality Certification will include requirements for monitoring the impacts of the closure of both the East and West Culverts and the restoration of circulation between the North and South Arms of Great Salt Lake.

In 2008 DWQ reclassified the beneficial uses of Great Salt Lake (Class 5) into five subclasses to more accurately reflect different salinity and hydrologic regimes and the unique ecosystems associated with each of the four major bays and adjacent wetlands. Great Salt Lake has the following beneficial use classifications: Classes 5A - Gilbert

Bay; 5B - Gunnison Bay; 5C - Bear River Bay; 5D - Farmington Bay; and 5E - Transitional waters along the shoreline. With limited water quality criteria defined for Great Salt Lake, DWQ relied on its anti-degradation policy and procedures to protect existing uses and ensure water quality of Great Salt Lake is maintained.

Therefore, as a condition of 401 Water Quality Certification for this UPRR project, DWQ has requested that the USACE include the following conditions in the USACE 404 NWP 14 permit SPK-2011-00755, dated December 6, 2013:

1. The conditions in this certification may be modified by the Director in response to information received during the 30-day public notice period ending January 15, 2014 at 6:00 p.m. or any time thereafter in order to meet state water quality standards. The Director will notify UPRR of any changes and provide an opportunity to confer regarding any necessary modifications.
2. Approval is given to temporarily reduce the circulation between Gilbert and Gunnison Bays, previously provided by the East Culvert, with authorization to do so ending March 21, 2014. UPRR agrees that before March 21, 2014 it will provide the Director with sufficient information to allow a determination to be made as to whether the impacts of the closure of the East Culvert are temporary and limited resulting in no Level II anti-degradation review being required, in accordance with UAC R317-2-3, or that the impacts are not temporary and limited resulting in a Level II anti-degradation review being required. The Director will make this determination on or before March 21, 2014. The Director's determination will provide for a public notice and comment period.
3. Within 30 days of the Director's signing of this Certification, UPRR will submit an Interim Monitoring Plan including a Quality Assurance Project Plan for interim monitoring. Interim monitoring will be conducted until superseded by the approved Mitigation and Monitoring Plan required by Condition 5.

The interim plan will include the requirements identified in the "Summary Table for Interim Monitoring Plan", below. A minimum of three locations in Gilbert Bay and two locations in Gunnison Bay will be monitored. The locations will be on each side of the Causeway in the vicinity of the East and West Culverts and a location in Gilbert Bay in the basin located between the Causeway and the rest of the Gilbert Bay.

Completeness of the interim plan will be determined by comparison with the EPA Requirements for Quality Assurance Project Plans (EPA/240/B-001/003 March 2001). Within 90 days of this Certification, the Director will hold a 30-day public comment period on the Interim Monitoring Plan. After the public comment period, the Director will approve the Interim Monitoring Plan or notify UPRR in writing of the deficiencies. The interim monitoring will be conducted in accordance with the approved Monitoring Plan and will begin no later than May 2014. In the event that UPRR is unable to commence monitoring by May 2014 DWQ will conduct the monitoring and UPRR will reimburse DWQ for all associated costs.

Results from the interim monitoring will be submitted to the Director for approval within 90 days of monitoring. UPRR will submit an annual report, by January 1 of each year, which summarizes the monitoring results including all laboratory and field supporting quality control data for the previous calendar year of all data collected.

Summary Table for Interim Monitoring			
Matrix	Field Parameters	Laboratory Analytes	Frequency
Water	secchi depth, total water depth, depth of chemocline (if present), surface to bottom profile at a	total arsenic, total copper, total lead, total selenium,	May, July, September, and January or February 4 events/year

	frequency of no greater than 0.5 meters: salinity, dissolved oxygen, pH, temperature	total mercury, total zinc, and total sulfate	
Gilbert Bay Brine Shrimp	Brine shrimp counts per liter of water from at least 3 tow samples	total arsenic, total copper, total lead, total selenium, total mercury, and total zinc	May, July, September 3 events/year

4. UPRR will continue to model and report the potential water quality impacts of closing the East Culvert as compared to the water quality as of November 9, 2012 and the potential water quality impacts of the compensatory opening(s) in the Causeway. UPRR is currently proposing a 180' bridge to compensate for the closure of the East and West Culverts.
  - a. The modeling will include the following elements:
    - i. Update, recalibrate, and run the 1998 USGS Water and Salt Balance Model (*Water-Resources Investigations Report 00-4221, Water and Salt Balance of Great Salt Lake, Utah, and Simulation of Water and Salt Movement through the Causeway, 1987 – 98* (Loving, Waddell and Miller, 2000) to evaluate the potential impacts of culvert closure and bridge construction on the water and salt balance between the North (Gunnison Bay) and South (Gilbert Bay) Arms of Great Salt Lake. The modeling effort shall include consultation with a representative appointed by the Director to review modeling progress at a frequency determined by the Director. The Director's review will include the development of baseline conditions, model input parameters, output sensitivity to parameters, quantitative or semi-quantitative evaluation of variability and uncertainty, model code modifications, simulations, model calibration, and any other information relevant to the model, as determined by the Director.
    - ii. UPRR will provide a report prepared by the United States Geological Society (USGS) documenting its review of the model. The USGS Scope of Work must be approved by the Director.
  - b. UPRR will submit the following to the Director for review: construction plans, specifications, and the schedule for construction of the bridge or other changes to the Causeway that could affect the circulation between Gunnison and Gilbert Bays. The Director will approve or disapprove the schedule for bridge construction.
5. UPRR will submit to the DWQ for approval a Mitigation and Monitoring Plan. The Mitigation and Monitoring Plan shall be submitted to the Director for approval. The Director may take action on the Mitigation and Monitoring Plan after a minimum 30-day public comment period. Within 60 days of the close of the public comment period, the Director will either approve or disapprove the plan. The Director will notify UPRR in writing of deficiencies in the plan if the plan is not approved. UPRR will correct the deficiencies to the Director's satisfaction, revise the plan, and resubmit it to the Director for approval within 30 days of the written notification unless the deadline is extended by the Director. Director will approve or disapprove changes to the Mitigation and Monitoring Plan and may hold additional public comment periods at the Director's discretion.

If an Environmental Assessment, Environmental Impact Statement, or other analyses of potential impacts are submitted to the United States Army Corps of Engineers to support the Clean Water Act Section 404

individual permit, this information will also be submitted to DWQ to be considered for the Mitigation and Monitoring Plan. The Mitigation and Monitoring Plan will include the relevant components described by the *EPA Requirements for Quality Assurance Project Plans* (EPA/240/B-001/003 March 2001) including the parameters to be monitored, the frequency of monitoring, and any proposed triggers for changing the monitoring plan or circulation conditions between Gunnison and Gilbert Bays shall be included in the plan. The plan will describe the mitigation options that could be implemented in response to findings of the monitoring. The options will at minimum specifically address options for either increasing or decreasing the circulation between Gilbert and Gunnison Bays if the Director concludes that the monitoring indicates degradation is occurring. After a minimum of 5 years of monitoring including the interim monitoring, UPRR shall submit a report documenting the results of the monitoring during the 5-year period which and describes any long-term changes in flow and salt transfer associated with the project in relation to the beneficial uses of Great Salt Lake, Anti-degradation policy, numeric criteria and narrative standards. The report shall describe UPRR's justification for cessation of monitoring in light of these findings. If the Director approves the report, the monitoring program may cease. If the Director disapproves, the report, UPRR, and DWQ shall meet and consider which aspects of the monitoring program should continue and additional term of monitoring.

6. The applicant shall not use any fill material which may leach organic chemicals (e.g., discarded asphalt) or nutrients (e.g., phosphate rock) immediately adjacent to or into Great Salt Lake.
7. The applicant shall obtain the following permits from the DWQ prior to the construction phase of the project:
  - o Dewatering activities, if necessary during the construction, may require coverage under the UPDES General Permit for Construction Dewatering, Permit No. UTG070000. A fact sheet describing the permit application procedures are located on our web site at: <https://secure.utah.gov/stormwater/main.html>. The permit requires water quality monitoring every two weeks to ensure that the pumped water is meeting permit effluent limitations, unless the water is managed on the construction site.
  - o Construction activities that disturb one acre or more are required to obtain coverage under the Utah Pollutant Discharge Elimination System (UPDES) Storm Water General Permit for Construction Activities, Permit No. UTR300000. The permit requires the development of a storm water pollution prevention plan (SWPPP) to be implemented and updated from the commencement of any soil disturbing activities at the site until final stabilization of the project. A fact sheet describing the permit application procedures are located on our web site at: <https://secure.utah.gov/stormwater/main.html>

Please contact Mr. Bill Damery at (801) 536-4354, [wdamery@utah.gov](mailto:wdamery@utah.gov) with any questions you may have concerning this 401 Water Quality Certification with Conditions.

Sincerely,

Walter L. Baker, P.E.  
Director

WLB:wd  
File: SPK 2011-00755  
wdamery\wp\RDCC\401 Certs New\Causeway UPR GSL\WQ Cert for NWP-14

cc: Jason Gipson, USACE  
Julia McCarthy, U.S. EPA Region VIII